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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,549

09/22/2008

Francois Court

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31684

7590

07/09/2009

ARKEMA INC.

PATENT DEPARTMENT - 26TH FLOOR

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PHILADELPHIA, PA 19103-3222

EXAMINER

HAUTH, GALEN H

ART UNIT

PAPER NUMBER

1791

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,549	<b>Applicant(s)</b> COURT ET AL.	
	<b>Examiner</b> GALEN HAUTH	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27, 36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) 36 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/29/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-27, drawn to a method for producing objects, classified in class 264, subclass 299.
  - II. Claims 36 and 37, drawn to a product, classified in class 428, subclass 543.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made from another and materially different process, such as one in which the formulation is not stored prior to molding techniques or by use of techniques not usually restricted to thermoplastics.

3. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;

- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

**Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined** even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention.**

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. During a telephone conversation with Thomas Roland on 06/30/2009 a provisional election was made without traverse to prosecute the invention of group I, claims 1-27. Affirmation of this election must be made by applicant in replying to this Office action. Claims 36 and 37 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 23, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Court et al. (WO01/92415, PN 6894113 used for citation and translation).

a. With regards to claim 1, Court teaches producing a thermosetting material, milling the material, and molding it to form an object (col 8 ln 45-49).

b. With regards to claim 23, Court teaches milling the material (col 8 ln 47).

c. With regards to claim 24, Court does not teach a time limitation, and it would be expected that given the identical materials used in the method of Court and the present invention, the composition of Court would inherently not possess a time limitation for storage within the scope of the applicants claimed time limitation. **NOTE:** Where ... the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. **Whether the rejection is based on “inherency” under 35 USC § 102, on prima facie obviousness” under 35 USC § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products.” In re Best, 562 F2d 1252, 1255, 195 USPQ 430, 433-4 (CCPA 1977).**

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***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 2-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Court et al. (WO01/92415, PN 6894113 used for citation and translation) in view of Yeager et al. (PN 6352782).

- a. With regards to claim 2, Court teaches preparing the mixture in a reactor (col 8 ln 22), extruder and calendaring (col 8 ln 44) in which 1 to 80% of an impact modifier comprising at least one copolymer comprising S-B-M, B-M, and M-B-M blocks, wherein each block is connected to the other by means of a covalent bond or of an intermediate molecule connected to one of the blocks via a covalent bond and to the other block via another covalent bond, M is a PMMA homopolymer or a copolymer comprising at least 50% by weight methyl methacrylate, B is incompatible with the thermoset resin and with the M block

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and its glass transition temperature  $T_g$  is less than the operating temperature of the thermoset material, and S is incompatible with the thermosetting resin, block B and block M and its  $T_g$  or its melting point  $T_m$  is above the  $T_g$  of B (abstract). Court teaches that from 20-99% of the material is thermosetting (abstract). Court teaches the inclusion of a core shell polymer at 5% by weight (col 14 Table 4 Test 11) in which the core shell polymer is at least one thermoplastic material (col 6 ln 56-60). While Court teaches the use of additives (col 8 ln 52-53), Court does not teach the inclusion of specific fillers in the material.

b. Yeager teaches a composition containing thermosetting materials (col 5 ln 60-62) with thermoplastic elastomer (col 10 ln 27-35, similar to the elastomer used in Court) in which organic and inorganic fillers are used in the composition to improve physical properties of the material including fibers (col 13 ln 38-67), fire retardants, UV absorbers, and dyes (col 15 ln 1-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include filler in the material of Court as taught by Yeager, because both relate to thermoplastic/thermosetting material mixtures and doing so can improve physical properties of the material.

c. With regards to claim 3, Court teaches mixing in a reactor for a first time and temperature followed by the addition of a hardener and continuing at a specified temperature sufficient to produce a homogeneous blend (col 8 ln 20-34).



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- d. With regards to claim 4, Court teaches that the M block comprises PMMA that is 60% syndiotactic (col 5 ln 16-20).
- e. With regards to claim 5, Court teaches using glycidyl methacrylate or tert-butyl methacrylate (col 5 ln 16-20).
- f. With regards to claim 6, Court teaches that the Tg of the B blocks copolymer is below zero degrees Celsius (col 5 ln 20-21).
- g. With regards to claim 7, Court teaches B is mainly 1,4 polybutadiene (col 5 ln 28-31, ln 43-44).
- h. With regards to claim 8, Court teaches hydrogenation of the B block (col 5 ln 31-33).
- i. With regards to claim 9, Court teaches using butyl acrylate (col 5 ln 39).
- j. With regards to claim 10, Court teaches that the Tg or Tm of S is above 23 degrees Celsius (col 6 ln 13-14).
- k. With regards to claim 11, Court teaches using polystyrene for S (col 6 ln 16).
- l. With regards to claim 12, Court teaches that the number average molecular weight of the copolymer is between 10000 and 500000 g/mol (col 6 ln 22-24).
- m. With regards to claim 13, Court teaches that the number average molecular weight is between 20000 and 200000 g/mol (col 6 ln 25-27).
- n. With regards to claim 14, Court teaches that the impact modifier is from 1 to 35% for 99 to 65% of thermoset (col 6 ln 35-37).

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- o. With regards to claim 15, Court teaches the inclusion of core shell polymers of functionalized elastomers, S-B block copolymers and ATBN and CTBN reactive rubbers (col 6 ln 39-43).
  - p. With regards to claim 16, Court teaches B is mainly 1,4 polybutadiene (col 5 ln 28-31, ln 43-44). Court teaches hydrogenation of the B block (col 5 ln 31-33) and the use of butyl acrylate (col 5 ln 39). Court teaches that the Tg or Tm of S is above 23 degrees Celsius (col 6 ln 13-14).
  - q. With regards to claim 17, Court teaches that the S-B diblock has a molecular weight of 10000 to 500000 g/mol (col 6 ln 51-55).
  - r. With regards to claim 18, Court teaches the inclusion of S-B-M and S-B copolymers (col 8 ln 4-6).
  - s. With regards to claim 19, Court teaches using S-B-M block polymers with core shell polymers (col 7 ln 60-64).
  - t. With regards to claim 20, Court teaches using S-B-M copolymer, S-B copolymers and ATBN or CTBN reactive rubber (col 7 ln 65-col 8 ln 1-6).
  - u. With regards to claim 21, Court teaches using MSBSM or MBSBM pentablocks (col 8 ln 7-10).
  - v. With regards to claim 22, Court teaches using an epoxy and hardener (col 8 ln 20-31).
11. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Court et al. (WO01/92415, PN 6894113 used for citation and translation) as applied to claim 1.

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a. With regards to claims 25 and 26, Court, as applied to claim 1, teaches molding the composition, but does not teach a shape; however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a sheet or film shape as such are well known molding shapes in the art.

b. With regards to claim 27, Court does not teach a time limitation, and it would be expected that given the identical materials used in the method of Court and the present invention, the composition of Court would inherently not possess a time limitation for storage within the scope of the applicants claimed time limitation. **NOTE:** Where ... the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. **Whether the rejection is based on “inherency” under 35 USC § 102, on prima facie obviousness” under 35 USC § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products.”** In re Best, 562 F2d 1252, 1255, 195 USPQ 430, 433-4 (CCPA 1977).

### ***Claim Rejections - 35 USC § 112***

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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13. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Regarding claim 1, the phrase "techniques usually restricted to thermoplastics" renders the claim indefinite because it is unclear as to what processes are considered to be restricted to thermoplastics as well as the desired scope of the claim. Claims 2-27 depend from claim 1 thus rendering them indefinite as well.
- b. The term "slow reaction kinetics" in claim 3 is a relative term which renders the claim indefinite. The term "slow" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
- c. The term "mainly comprised" in claim 7 is a relative term which renders the claim indefinite. The term "mainly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear whether "mainly" comprises greater than 50% by weight, by mole, a greater percentage than other components, or any other definition in which one component is greater than another component.
- d. Claims 24 and 27 are indefinite for the limitation of "without time limitation". It is unclear as to what the scope of "without time limitation" concerns.

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The specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GALEN HAUTH whose telephone number is (571)270-5516. The examiner can normally be reached on Monday to Thursday 8:30am-5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/GHH/

/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791